



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0779; Directorate Identifier 2014-NM-052-AD]

RIN 2120-AA64

Airworthiness Directives; Lockheed Martin Corporation/Lockheed Martin

Aeronautics Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and 382G airplanes. This proposed AD was prompted by an evaluation by the design approval holder (DAH) indicating that the outer wings are subject to widespread fatigue damage (WFD). This proposed AD would require replacing certain outer wings with new or certain serviceable outer wings. We are proposing this AD to prevent fatigue cracking of the outer wing, and to prohibit exceeding the limit of validity (LOV), which could result in reduced structural integrity of the airplane.

DATES: We must receive comments on this proposed AD by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Lockheed Martin Corporation/Lockheed Martin Aeronautics Company, Airworthiness Office, Dept. 6A0M, Zone 0252, Column P-58, 86 S. Cobb Drive, Marietta, GA 30063; telephone 770-494-5444; fax 770-494-5445; email ams.portal@lmco.com; Internet <http://www.lockheedmartin.com/ams/tools/TechPubs.html>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0779; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Carl Gray, Aerospace Engineer, Airframe Branch, ACE-117A, FAA, Atlanta Aircraft Certification Office (ACO), 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5554; fax: 404-474-5605; email: Carl.W.Gray@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the **ADDRESSES** section.

Include “Docket No. FAA-2014-0779; Directorate Identifier 2014-NM-052-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

Structural fatigue damage is progressive. It begins as minute cracks, and those cracks grow under the action of repeated stresses. This can happen because of normal operational conditions and design attributes, or because of isolated situations or incidents such as material defects, poor fabrication quality, or corrosion pits, dings, or scratches. Fatigue damage can occur locally, in small areas or structural design details, or globally. Global fatigue damage is general degradation of large areas of structure with similar structural details and stress levels. Multiple-site damage is global damage that occurs in a large structural element such as a single rivet line of a lap splice joining two large skin panels. Global damage can also occur in multiple elements such as adjacent frames or stringers. Multiple-site-damage and multiple-element-damage cracks are typically too small initially to be reliably detected with normal inspection methods. Without intervention, these cracks will grow, and eventually compromise the structural integrity of the airplane, in a condition known as WFD. As an airplane ages, WFD will likely occur, and will certainly occur if the airplane is operated long enough without any intervention.

The FAA's WFD final rule (75 FR 69746, November 15, 2010) became effective on January 14, 2011. The WFD rule requires certain actions to prevent structural failure due to WFD throughout the operational life of certain existing transport category airplanes and all of these airplanes that will be certificated in the future. For existing and future airplanes subject to the WFD rule, the rule requires that DAHs establish a limit of validity (LOV) of the engineering data that support the structural maintenance program. Operators affected by the WFD rule may not fly an airplane beyond its LOV, unless an extended LOV is approved.

The WFD rule (75 FR 69746, November 15, 2010) does not require identifying and developing maintenance actions if the DAHs can show that such actions are not necessary to prevent WFD before the airplane reaches the LOV. Many LOVs, however, do depend on accomplishment of future maintenance actions. As stated in the WFD rule, any maintenance actions necessary to reach the LOV will be mandated by airworthiness directives through separate rulemaking actions.

In the context of WFD, this action is necessary to enable DAHs to propose LOVs that allow operators the longest operational lives for their airplanes, and still ensure that WFD will not occur. This approach allows for an implementation strategy that provides flexibility to DAHs in determining the timing of service information development (with FAA approval), while providing operators with certainty regarding the LOV applicable to their airplanes.

This proposed AD for all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and 382G airplanes was prompted by an evaluation by the DAH indicating that the outer wings are subject to WFD. The root cause of WFD is fatigue cracks manifesting and growing simultaneously at similar structural details and stress levels on the outer wings. Fatigue cracking is increasingly likely as the airplane is being operated and is aging; and without intervention, fatigue cracking of the outer wing could result in reduced structural integrity of the airplane.

Relevant Service Information

We reviewed Lockheed Service Bulletin 382-57-96, dated December 16, 2013. This service bulletin describes procedures for replacing outer wings having serial numbers 3946 through 4541 inclusive, and for replacing manufacturing end product replacement outer wings 14Y series having part numbers 388021-9/-10 with new or certain serviceable outer wings.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type designs.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously, except as discussed under "Differences Between this Proposed AD and the Service Information."

Differences Between this Proposed AD and the Service Information

Operators should note that Lockheed Service Bulletin 382-57-96, dated December 16, 2013, states that airplanes with more than 30,000 total flight hours on certain outer wings should be grounded until the outer wings are replaced. The manufacturer has informed us that there is a 28-month lead time for obtaining replacement outer wings. We find 30 months after the effective date of this AD for airplanes having outer wings that have accumulated 30,000 total flight hours or more to be an appropriate compliance time to complete outer wing replacement. In developing the compliance time for this action, we considered the degree of urgency associated with addressing the unsafe condition, the maximum interval of time allowable for all affected airplanes to continue to operate without compromising safety, and the availability of required parts.

Explanation of Compliance Time

The compliance time for the replacement specified in this proposed AD for addressing WFD was established to ensure that discrepant structure is replaced before WFD develops in airplanes. Standard inspection techniques cannot be relied on to detect WFD before it becomes a hazard to flight. We will not grant any extensions of the compliance time to complete any AD-mandated service bulletin related to WFD without extensive new data that would substantiate and clearly warrant such an extension.

Costs of Compliance

We estimate that this proposed AD affects 20 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Left and right outer wing replacement	1,500 work-hours X \$85 per hour = \$127,500	\$8,000,000	\$8,127,500	\$162,550,000

Initial Regulatory Flexibility Analysis

This section presents the initial regulatory flexibility analysis (IRFA) that was prepared for this action. We have reworded and reformatted this analysis for publication in the Federal Register.

The Regulatory Flexibility Act of 1980 (Public Law 96-354) (RFA) establishes “as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration.” The RFA covers a wide

range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

The FAA finds that this proposed rule would have a significant impact on a substantial number of entities. Therefore, under Section 603(b) of the RFA, the IRFA must address:

- A description of reasons the agency is considering the action;
- A statement of the legal basis and objectives for the proposed rule;
- A description of the record keeping and other compliance requirements of the proposed rule;
- All federal rules that may duplicate, overlap, or conflict with the proposed rule;
- A description and an estimated number of small entities to which the proposed rule will apply; and
- A description of alternatives considered.

The following provides a detailed description of each of the six items specified previously.

1. A description of reasons the agency is considering the action.

We are proposing to adopt a new AD for all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and

382G airplanes because we evaluated all the relevant information and determined the unsafe condition is likely to exist or develop in other products of the same type design. This proposed rule was prompted by an evaluation by the design approval holder (DAH) indicating that the outer wings are subject to WFD. This proposed rule would require replacing certain outer wings with new or certain serviceable outer wings.

2. A statement of the legal basis and objectives for the proposed rule.

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority. We propose this rulemaking under the authority described in subtitle VII, part A, subpart III, section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action. The objective of this proposed AD is to prevent fatigue cracking of the outer wing, which has resulted in an accident, and to prohibit exceeding the LOV.

3. A description of the record keeping and other compliance requirements of the proposed rule.

The agency expects only minimal documentation, reporting, and record-keeping compliance requirements to result from this proposed rule. Every operator (including small businesses and businesses with greater than 1,500 employees) will incur a paperwork burden.

4. All Federal rules that may duplicate, overlap, or conflict with the proposed rule.

We are unaware that this proposed rule will overlap, duplicate, or conflict with existing Federal rules.

5. A description and an estimated number of small entities to which the proposed rule will apply.

Operators affected by this proposed rule would be required to comply with the AD requirements within 30 months after the effective date of the final rule. The FAA uses current U.S. operators' employment and annual revenue in order to determine the number of operators this proposed rule affects.

To determine the economic impact of this proposed rule on small business operators, the agency began by identifying the affected firms, gathering operational data, and establishing the compliance cost impact. We obtained a list of U.S. operators who would be affected by this proposed rule from the FAA Flight Standards Service National Vital Information Subsystem (NVIS) database and from private fleet data providers. Using information provided by the U.S. Department of Transportation Form 41 filings, the World Aviation Directory & Aerospace Database (WAD), and the Internet, the agency obtained company revenue and employment for many of the operators.

We determined that nine operators could be affected by this proposed rule. Many of these are air cargo operators. Of the nine operators, there are seven that publically reported annual employment and operating revenue data. All seven operators that reported annual employment data are below the Small Business Administration's (SBA) size standard of 1,500 employees for a small business in the air transport industry. Due to the sparse amount of publicly available data on internal company financial and employment statistics for small entities, it is not feasible to identify how many of the remaining carriers would also qualify as small businesses. Based on the publically available data, this proposed rule would have an impact on a substantial number of small entities.

To assess this proposed rule's cost impact to small business operators, we determined the additional cost this rulemaking would add to the seven operators.

We use the average hourly labor cost (including benefits) as a basis to estimate costs for the outer wing replacement of the affected aircraft. In order to estimate the impact on small entities, we sum the incremental costs of this proposed rule, and use that estimate to calculate an average cost per operator. We then use that average to estimate the total cost burden on operators that we identify as meeting the above definition of small entities.

Specifically, we estimate each operator's total compliance cost by multiplying our estimate of the average cost per outer wing replacement by the number of affected aircraft each of the seven air carriers operate that meet the SBA's size standard for a small business of 1,500 employees.

From the summer 2013 edition of the Airliner Price Guide, we determined the used retail value of the affected aircraft, which ranges between \$1.92 and \$2.91 million. In the preamble of this proposed rule, we estimate that it would cost an operator about \$8.1 million to replace the outer wing. In other words, this proposed rule would cost between three to four times the retail value of the aircraft.

On the basis of these estimates, we conclude that this proposed rule will have a significant economic impact on a substantial number of small entities.

6. A description of alternatives considered.

The FAA considered alternatives as it developed the proposed rule. A discussion of those alternatives follows.

Alternative 1: The status quo.

The status quo alternative has no compliance costs, but to continue operation of the affected aircraft constitutes a known unsafe condition. Therefore, we rejected this status quo alternative.

Alternative 2: Excluding certain small entities.

We considered excluding certain operators from compliance with the proposed rule because they are small entities; however, the affected aircraft operated by small entities could experience WFD, which could result in reduced structural integrity of the airplane that has led to catastrophic accidents. Thus, we did not find this alternative to be acceptable.

Alternative 3: Extending the final compliance date for small entities.

Extending the compliance date for small entities reduces the costs to small entities over the analysis interval. Under this alternative, we expect that the projected cost of the

proposed rule would still be significant for some of the operators studied. As the airplane ages, the wing deteriorates, making a flight less safe. Thus, we also found this alternative to be unacceptable.

Therefore, this rulemaking will have a significant economic impact on a substantial number of small entities. We invite public comments regarding this determination.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This proposed regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Lockheed Martin Corporation/Lockheed Martin Aeronautics Company: Docket No. FAA-2014-0779; Directorate Identifier 2014-NM-052-AD.

(a) Comments Due Date

We must receive comments by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

(b) Affected ADs

This AD affects AD 2012-06-09, Amendment 39-16990 (77 FR 21404, April 10, 2012); AD 2011-15-02, Amendment 39-16749 (76 FR 41647, July 15, 2011).

(c) Applicability

This AD applies to all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and 382G airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 57, Wings.

(e) Unsafe Condition

This AD was prompted by an evaluation by the design approval holder indicating that the outer wings are subject to widespread fatigue damage. We are issuing this AD to prevent fatigue cracking of the outer wing, which could result in reduced structural integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Outer Wing Replacement

For airplanes with outer wings having serial numbers (S/Ns) 3946 through 4541 inclusive, or manufacturing end product (MEP) replacement outer wings 14Y series having part numbers (P/Ns) 388021-9/-10: Before the accumulation of 30,000 total flight hours on the outer wings, or within 30 months after the effective date of this AD, whichever occurs later, except as specified in paragraph (i) of this AD, replace the outer wings as provided in paragraphs (h)(1) and (h)(2) of this AD, as applicable, in accordance with the Accomplishment Instructions of Lockheed Service Bulletin 382-57-96, dated December 16, 2013.

(h) Acceptable Replacement Wings

(1) Outer wings having S/Ns 3946 through 4541 inclusive, and MEP replacement outer wings 14Y series having P/Ns 388021-9/-10, are acceptable for the outer wing replacement required by paragraph (g) of this AD, provided that the replacement outer wing has accumulated less than 30,000 total flight hours. Upon reaching 30,000 total flight hours, the replacement outer wing must be replaced as required by paragraph (g) of this AD.

(2) Outer wings having S/Ns 4542 and subsequent, or all MEP replacement outer wings, except for 14Y series having P/Ns 388021-9/-10, that have accumulated less than 75,000 total flight hours are acceptable for the outer wing replacement required by paragraph (g) of this AD.

Note 1 to paragraph (h) of this AD: Lockheed Service Bulletin 382-57-96, dated December 16, 2013, describes an option to salvage certain system components when replacing an outer wing. An operator may need to recertify compliance with AD 2012-06-09, Amendment 39-16990 (77 FR 21404, April 10, 2012); and AD 2011-15-02, Amendment 39-16749 (76 FR 41647, July 15, 2011); if salvaged components are used in a replacement wing.

(i) Wings with Previous Military Usage

For airplanes that have any wing with previous military usage: Within 30 days after the effective date of this AD, contact the Manager, Atlanta Aircraft Certification Office (ACO), FAA, for a compliance time to accomplish the actions required by paragraph (g) of this AD. For a compliance time to be approved by the Manager, Atlanta ACO, as required by this paragraph, the Manager's approval letter must specifically refer to this AD.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Atlanta ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (k)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about this AD, Carl Gray, Aerospace Engineer, Airframe Branch, ACE-117A, FAA, Atlanta ACO, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5554; fax: 404-474-5605; email: carl.w.gray@faa.gov.

(2) For service information identified in this AD, contact Lockheed Martin Corporation/Lockheed Martin Aeronautics Company, Airworthiness Office, Dept. 6A0M, Zone 0252, Column P-58, 86 S. Cobb Drive, Marietta, GA 30063; telephone 770-494-5444; fax 770-494-5445; email ams.portal@lmco.com; Internet <http://www.lockheedmartin.com/ams/tools/TechPubs.html>. You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on November 19, 2014.

Suzanne Masterson,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

BILLING CODE 4910-13-P

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